

REMARKS

Claims 1-18 are pending in this application for the Examiner's review and consideration. New claim 18 was added. Claims 1-5, 7-11, and 13-17 were amended to more clearly recite the invention. No new matter is amended by these claim amendments so that their entry at this time is warranted.

Rejection Under 35 U.S.C. 102(e)

Claims 1-4, 6-10, and 12-16 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent No. 6,530,656 to Teraoka *et al.* ("Teraoka") for the reasons set forth on pages 2-4 of the Office Action. Applicants respectfully traverse the rejection for the reasons that follow.

Teraoka discloses a color inkjet recording ink set for recording a color image on a recording medium comprising a color ink and a black ink, in which the black ink comprises a cationic self-dispersible carbon black, and the color ink comprises an anionic dye and an anionic substance. *See* Teraoka col. 2, lines 30-34. Teraoka further discloses a method for alleviating bleeding in a boundary between a black image formed by an inkjet method and a color image formed by an inkjet method. *Id.* col. 3, lines 1-4.

The present invention is directed to an ink set for inkjet recording for forming a black image portion in a color image with a black ink and a color ink, wherein the black ink comprises cationic or anionic self-dispersible carbon black and the color ink comprises a self-dispersible pigment having an opposite polarity to that of the self-dispersible carbon black. *See* Instant Specification, page 5, lines 3-8. The present invention is also directed to a method for inkjet recording comprising: recording a color image in accordance with recording signals by ejecting from an orifice a black ink and a color ink, wherein the black ink comprises cationic or anionic self-dispersible carbon black and the color ink comprises a substance having an opposite polarity to that of the self-dispersible carbon black, and wherein a black image portion in the color image is formed with the black ink and the color ink, and a time lag between ejecting of the black ink and ejecting of the color ink is 20 ms or less. *See* Instant Specification, page 5, lines 9-17. The present invention is also directed to an apparatus for inkjet recording for forming a color image comprising: an ink cartridge for ejecting a black ink and another ink cartridge for ejecting a color ink, wherein the black ink comprises cationic or anionic self-dispersible carbon black and the color ink comprises a substance having an opposite polarity to that of the self-dispersible carbon black, and wherein a black image portion in the color image is formed with

the black ink and the color ink, and a time lag between ejecting of the black ink and ejecting of the color ink is 20 ms or less. *See* Instant Specification, page 5, line 18 – page 6, line 1.

To anticipate a claim, a reference must teach each and every element of the claim. Manual of Patent Examining Procedure (MPEP) § 2131. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 914 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Applicants submit that Teraoka does not disclose each and every element of independent claims 1, 6, and 12 of the present invention for the following reasons.

Regarding amended independent claim 1 and its dependent claims 2-5, Applicants note that Teraoka does not disclose an ink set for inkjet recording, wherein the black ink comprises cationic or anionic self-dispersible carbon black and the color ink comprises a self-dispersible pigment having an opposite polarity to that of the self-dispersible carbon black. The anionic dye and anionic substance disclosed in Teraoka as materials which comprise the color ink are distinguished from the self-dispersible pigment recited in claim 1 of the present invention. As is well known in the inkjet art, a pigment is different than a dye.¹ One difference, for example, is that dyes are completely soluble in the solvent, whereas pigments are insoluble, at least in part. That Teraoka does not include a self-dispersible pigment in its disclosure of an anionic dye or anionic substance is evident in the language Teraoka uses in describing both the color ink and the black ink. When referring to the carbon black used in the color ink, Teraoka describes it as a pigment. *See e.g., Teraoka*, col. 4, lines 31-38. Teraoka, moreover, discloses that “use of pigment ink is advantageous to obtain high image density or a perfect image durability, in comparison with dye ink. For this reason, various black inks containing carbon black as the coloring material have been developed for ink-jet recording.” *Teraoka*, col. 4, lines 41-46. Teraoka thus distinguishes a dye (such as that disclosed in its anionic form as the colorant for the colored ink) from a pigment like carbon black.

Nor does the anionic substance disclosed in Teraoka encompass a self-dispersible pigment. The anionic substances disclosed in Teraoka include substances having carboxyl groups or sulfonic groups, but not pigments. *See Teraoka*, Col. 8, lines 49-67. Nowhere in the specification

¹ The American Heritage College Dictionary, Fourth Edition, (2002) defines a dye as a substance used to color materials and (in the verb form) to color a material, esp. by soaking in a solution. (underlining added for emphasis) The same dictionary defines pigment as a dry coloring matter, usually in the form of an insoluble powder, that is mixed with water, oil, or another base to produce paint and similar products. Thus, among other differences, a dye is a soluble colorant, whereas a pigment is an insoluble colorant.

does Teraoka disclose or even suggest that an anionic substance could encompass a pigment. Since a pigment and a dye are mutually exclusive of one another, and since Teraoka's anionic substance does not encompass a pigment, Teraoka's disclosure of an anionic dye and anionic substance neither discloses nor suggests a pigment, much less a self-dispersible pigment. Accordingly, Teraoka does not anticipate, or even render obvious, independent claim 1 of the present invention, or its dependent claims, 2-5.

Regarding independent claims 6 and 12, and their dependent claims 7-10 and 13-16, Applicants first note that independent claims 6 and 12 contain a common limitation or element, *i.e.*, that a black image portion in the color image is formed with the black ink and the color ink. Applicants respectfully disagree with Examiner's assessment that Teraoka discloses an ink set for inkjet recording for forming a black image portion in a color image with a black ink and a color ink. Rather, Teraoka discloses an ink set, wherein a color image portion is formed with a color ink and a black image portion is formed with a black ink. See Teraoka, Abstract. As stated in Teraoka, "one object of the present invention is to provide an ink set for color inkjet recording which can sufficiently suppress color bleeding in the boundary region between the black ink and the color ink when used for a color image formation." Teraoka, col. 2, lines 15-18. The presence of a boundary between the black ink and the color ink further supports Teraoka's disclosure of color image portion formed exclusively with a color ink and a black image portion formed exclusively with a black ink. Teraoka further discloses that the ink jet recording apparatus used in evaluating the ink sets of the invention, *i.e.*, the Canon BJF-800, was "modified so that black ink and color ink are applied in the same one scan, but the color ink is applied immediately after the black ink application to a region contiguous to the black region." Teraoka, col. 23, lines 20-24. Thus, the black ink and the color inks of Teraoka are applied at different times and in different regions of the recording paper. This application of the black ink and color inks in different regions of the recording paper is vastly different from what is claimed in the present invention.

The black ink and the color inks of the present invention's inkset, though applied at different times, are applied within the same region of the recording paper to form a black image portion in a color image. The specification of the present invention states, for example, that the method for inkjet recording "is characterized [in that] the black image portion in the color image contains black ink and the color ink, and a time lag between ejecting of the black ink and ejecting of the color ink is 20 ms or less." Instant Specification, page 26, lines 6-10 (underlining added for emphasis). The

specification further states that due to this short time lag, “even when the order of recording the color ink and the black ink is inverse during reciprocal scanning movement, both inks are effectively mixed to react with each other on paper before penetration, whereby high density of images can be obtained.” *Id.* page 26, lines 15-19. The specification of the present invention also states that “the printed amount of the color ink to form the black image portion is preferably specified in a range of 10 to 50 % relative to the amount of the black ink,” and that “the use amount of the color ink may vary depending on the proportion of each of the cyan, magenta, and yellow dyes, or may be adjusted to alter the color tone at the black image portion.” *Id.* page 28, lines 3-7. It is thus clear that the black image portion of the present invention is formed from a mixture of the black ink and the color inks in the same region of the recording paper. This, of course, is unlike the disclosure in Teraoka, wherein a separate black image portion is formed exclusively with black ink and a separate color image portion is formed exclusively with color ink. This critical difference between the disclosure in Teraoka and the present invention precludes anticipation of the present invention by Teraoka. Therefore, Teraoka does not teach or even suggest each and every element of independent claims 6 and 12 of the present invention. Accordingly Teraoka does not anticipate independent claims 6 and 12 of the present invention, or their respective dependent claims 7-10 and 13-16.

Rejection Under 35 U.S.C. 103

Claims 5, 11, and 17 were rejected under 35 U.S.C. § 103 as allegedly being obvious over Teraoka in view of U.S. Patent No. 5,151,128 to Fukushima *et al.* (“Fukushima”). Applicants respectfully traverse the rejection for the reasons that follow.

Fukushima discloses an inkjet ink that is capable of high definition and high image quality recording on both coated inkjet paper and non-coated paper. Fukushima col. 1, lines 8-20. The ink comprises a coloring agent, a liquid carrier medium and an alkyl ether of polyoxyethylene-polypropylene random polymer having the general formula:

$R_1-(X)-O-R_2$, wherein R_1 and R_2 are each a hydrogen atom or an alkyl group, with the proviso that they cannot both be a hydrogen atom, and X is a random polymer of ethylene oxide and polypropylene oxide. Fukushima, col. 2, lines 13-24.

As stated above in the section of the Remarks regarding the rejection under 35 U.S.C. § 102(e), Teraoka does not disclose or suggest all of the elements of independent claims 1, 6, and 12 of the present invention. More particularly, Teraoka does not disclose a color ink comprising a self-

dispersible pigment, as in claim 1, or an ink set for forming a black image portion in a color image with a black ink and a color ink, as in claims 6 and 12. Fukushima neither discloses nor suggests anything to resolve these deficiencies. Accordingly, the combination of Teraoka and Fukushima does not render obvious dependent claims 5, 11, and 17, as this combination does not render obvious the independent claims from which these claims depend.

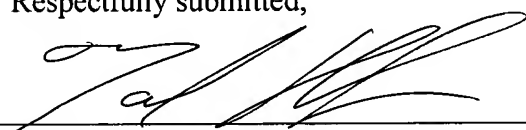
CONCLUSIONS

It is respectfully submitted that all claims are now in condition for allowance, early notice of which would be appreciated. Should the Examiner disagree, Applicants respectfully request a telephonic or in-person interview with the undersigned attorney to discuss any remaining issues and to expedite the eventual allowance of the claims.

No fees are believed to be required for this submission. Should any fees be required, however, please charge those fees to Morgan, Lewis & Bockius LLP deposit account no. 50-0310.

Respectfully submitted,

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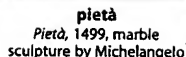
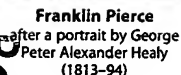
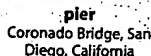
Stress marks:
' (primary);
' (secondary), as in
lexicon (lěk'si-kōn')

utch metal *n.* An alloy of 80 percent copper and

grows smaller. [ME *dwerf* < OE *dweorh*.]
 Cornel *n.* A herbaceous plant (*Cornus canadensis*) of
 North America having creeping rhizomes, scarlet fruit,
 and flowers surrounded by four white bracts.

motion of a body or system of bodies, esp. of forces that do not originate within the system itself. **b.** (used with a pl. verb) The forces and motions that characterize a system. **2.** (used with a pl. verb) The social, intellectual, or moral forces that produce activity and change in a given sphere. **3.** (used with a pl. verb) Variation

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[ME, spice, red dye < Lat. *pigmentum* < *pingere*, to paint.] —pig'

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